

The Decadal Evolution of Career Decision-Making (2015–2025): A Bibliometric Mapping of Emerging Frontiers

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Abstract. Career decision-making (CDM) studies has expanded substantially in response to rapid transformations in the modern workplace, while its intellectual landscape has become increasingly fragmented. Therefore, this study synthesizes 1,872 Scopus-indexed articles from 2015 to 2025 to map the field's intellectual landscape and its forward-looking trajectories. Through performance analysis and science mapping, an exponential growth in productivity was identified, peaking in 2025, with the United States and Itamar Gati maintaining dominant citation influence. It is important to state that although Social Cognitive Career Theory was observed to remain the primary bedrock, keyword co-occurrence and overlay visualizations exposed a significant paradigm shift, showing that the field is moving from isolated individual-psychological factors toward highly contextual, adaptive, and systemic models. Additionally, international co-authorship patterns pointed to a burgeoning diversification of global perspectives beyond Western-centric frameworks. These findings provide a strategic roadmap for scholars, marking the transition from “symptom-based” CDM study to “context-adaptive” modeling in an era of global labor market disruption.

Keywords: bibliometric analysis, career decision-making, global labor market disruption

Evolusi Intelektual Pengambilan Keputusan Karier (2015–2025): Analisis Bibliometrik terhadap Dinamika dan Tren Masa Depan.

Abstrak. Di tengah volatilitas dunia kerja modern, literatur mengenai pengambilan keputusan karier telah berkembang pesat namun tetap terfragmentasi secara konseptual. Penelitian ini menyajikan pemetaan komprehensif terhadap 1.872 artikel Scopus selama dekade terakhir (2015–2025) untuk mengidentifikasi struktur intelektual dan arah baru dalam bidang ini. Menggunakan kerangka kerja analisis kinerja dan pemetaan sains, hasil penelitian menunjukkan pertumbuhan literatur yang eksponensial, mencapai puncaknya pada tahun 2025. Amerika Serikat dan Itamar Gati tetap menjadi pilar utama dalam kontribusi sitasi, dengan Teori Kognitif Sosial Karir (SCCT) sebagai fondasi teoritis yang mendominasi. Namun, *analisis keyword co-occurrence* dan *overlay visualization* mengungkap pergeseran kritis: penelitian mulai beralih dari fokus tradisional pada individu-psikologis menuju pendekatan yang lebih kontekstual, adaptif, dan sistemik. Selain itu, kolaborasi internasional mulai meluas melampaui poros Barat, mencerminkan diversifikasi perspektif dalam pendidikan dan kesehatan. Temuan ini tidak hanya memetakan masa lalu, tetapi juga memberikan peta jalan strategis bagi peneliti masa depan untuk mengeksplorasi model pengambilan keputusan yang adaptif terhadap disrupsi kerja global.

Kata Kunci: analisis bibliometrik, disrupsi kerja global, pengambilan keputusan karier

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Introduction

Career decision-making is an essential process in individual career development, particularly in the context of higher education and the dynamic nature of the modern world of work. This process covers identifying career alternatives, evaluating the fit between career options and personal characteristics, comparing available choices, and essentially selecting the career path perceived as most appropriate by the individual (Gati et al, 2019; Gati & Kulcsár, 2021; Kulcsár et al, 2020). The complexity of career decision-making has increased due to changes in the global work environment, advancements in digital technology, and the volatility of labor market dynamics (Frank et al, 2019; Graham & Anwar, 2019; Piro'cã et al, 2021). These conditions have led younger generations to face increasingly complex career choices when determining career directions that are consistent with their values, competencies, and available employment opportunities (Ayoobzadeh et al, 2024; Kraght & Brøndum, 2025; Nordin & Mathew, 2024; Putri & Hartono, 2025; Struffolino & Raitano, 2020).

Scholarly efforts to understand the processes of career choice and career decision-making have developed rapidly since the early twentieth century. The history of career decision-making theories began with Parsons, who introduced the trait and factor theory, emphasizing the importance of compatibility between individual characteristics and job

requirements (Hartung & Blustein, 2002). Subsequently, classical theories evolved, including Holland's Theory, which emphasizes the fit between personality types and work environments (person-environment fit) (Bright & Pryor, 2022). Super's Life-Span Life-Stage Theory, which conceptualizes career decision-making as a lifelong developmental process with distinct stages (Bright & Pryor, 2022) and Theory of Work Adjustment proposed by Dawis and Lofquist, which draws attention to the adjustment between individual needs and the work environment (Duffy & Dik, 2009).

Developmental and social approaches have further gained traction in understanding career decision-making. Developmental approaches emphasize that career decisions represent a dynamic process shaped by individual changes and environmental contexts over time. Contemporary self-concept theory proposed by Savickas has been articulated through career construction theory and life-design counseling, emphasizing lifelong adaptation and the ongoing interaction between individuals and an ever-changing social context (Juntunen et al., 2019). Meanwhile, social theories such as Social Cognitive Career Theory proposed by Lent, Brown, and Hackett (Lent et al., 1994; Lent & Brown, 2020), as well as Krumboltz's Social Learning Theory (Yunus et al, 2024), assert that career decision-making is shaped by the interaction of personal factors, learning experiences, and environmental influences.

Subsequent theoretical developments brought cognitive and dynamic models of career decision-making to the forefront. Cognitive theories, such as Cognitive Information Processing (CIP), emphasize individuals' thinking processes in problem-solving and career decision-making (Peterson et al, 2024; Sampson et al, 1999, 2020; Wang & Liu, 2022). Dynamic and non-hierarchical models have also been developed to capture more flexible and adaptive decision-making processes, including the Dual-Process Theoretical Model of Career Decision-Making (DTC), which explains how individuals use intuitive (fast, automatic) and analytical (slow, deliberate) processes when making career choices, particularly under conditions of uncertainty (Xu, 2021b; Xu & Flores, 2023). Contemporary approaches such as Chaos Theory of Careers and Systems Theory Framework further suggest that career decision-making is shaped by complex factors, change, chance events, and interactions between individuals and social systems (McMahon & Patton, 2022; Pryor & Bright, 2003). Across these theoretical perspectives, a consistent theme stands out, showing that career decision-making is shaped not only by individual factors but also by social, cultural, and work environmental influences.

Career decision-making is a process that covers generating a list of promising career alternatives, confirming the compatibility of these alternatives with individual

characteristics, comparing available options, and essentially selecting the most suitable one (Gati, 2013; Gati et al, 2019; Gati & Kulcsár, 2021). This process is highly complex and not entirely rational in nature, as it also includes emotional aspects, values, perceptions, and relevant information (Krieshok et al, 2009; Xu, 2021)(Krieshok et al, 2009; Xu, 2021). Empirical findings show that individuals encounter various challenges during career decision-making, including internal conflicts, anxiety, uncertainty, and value-related tensions, as well as personal perceptions regarding the chosen alternatives (Gati & Kulcsár, 2021; Kulcsár et al, 2020). Ineffective or difficult career decision-making among younger generations may increase the risk of mental health problems such as anxiety, stress, and depression (Costa et al, 2025; Khan & Rehman, 2019), and may also reduce overall life satisfaction (Parola & Marcionetti, 2022). Effective career decision-making, therefore, represents an important issue warranting particular attention for younger generations.

Scholarly exploration of career decision-making has continued to develop over the past several decades, driven by the increasing need for individual adaptability in navigating career uncertainty (Gati & Kulcsár, 2021; Jiang et al, 2019; Kulcsár et al, 2020; Sullivan & Al Ariss, 2021). Bibliometric analyses and mapping techniques have also been widely applied to identify trends in scholarly output, draw attention to key topics, and examine patterns

of collaboration and scholarly contributions in this field. For example, studies such as Chen et al. (2020) provided a bibliometric review of career adaptability, Pico-Saltos et al. (2021) examined career success, and Jiang et al. (2023) investigated how career proactivity contributes to career development. However, these investigations do not specifically focus on career decision-making among younger generations. The results of these bibliometric analyses point to a shift from traditional models toward more dynamic, contextual, and data-driven approaches. Scholarly work that explicitly maps the development, intellectual structure, and thematic focus of career decision-making studies, however, remains relatively limited.

Consistent with the need for a more systematic understanding of the development of career decision-making scholarship, this study adopts a bibliometric approach to identify patterns of scholarly productivity, intellectual structure, and thematic trends in the literature over the period from 2015 to 2025. This analysis is expected to expose dominant trends, map key contributors in the field of career decision-making, and identify relevant gaps that may serve as a foundation for developing a career decision-making model adaptive to the dynamics of the contemporary world of work. Based on the objectives, this present study aims to address the following questions: (1) What are the patterns of scholarly productivity and scientific impact in publications related to

career decision-making? (2) Which works and contributors play the most significant roles in shaping the field of career decision-making? (3) How are scientific collaboration networks configured in career decision-making scholarship? (4) What major themes define the scope of career decision-making scholarship, and how have these themes evolved over time?

Method

The study adopts a bibliometric approach to conduct a systematic examination of career decision-making scholarship. This approach was selected because it provides a structured approach for analyzing large volumes of scientific literature using indicators such as publication year, citation frequency, keywords, and authorship (Chandrakumar et al., 2024). Through this approach, scholars can identify prevailing thematic trends, major scholarly contributions, and the intellectual structure across a given field, as well as offer directions for future investigation through cluster mapping and trend analysis (Cheng et al., 2023; Marchiori et al., 2021; Maryadi et al., 2025; Yadav & Lenka, 2022).

Two bibliometric dimensions serve as the analytical framework in this study. The first is performance analysis, which assesses citation counts, publication output, and the H-index to identify influential authors, institutions, and countries (Amiri et al., 2023). The second is science mapping, which explores relationships among scholarly components to visualize the

structure and evolution of the field, covering co-citation analysis, co-authorship analysis, and keyword co-occurrence analysis (Boyack & Klavans, 2010; Klarin, 2024). Furthermore, this study adopts the use of VOSviewer software to

explore and visualize the scientific literature (Patty et al, 2024; van Eck & Waltman, 2010). Table 1 presents a summary of research questions, gaps addressed, analytical approaches applied, and types of analyses conducted.

Table 1
Analytical Approaches Based on Research Questions

Research Questions	Identified Research Gaps	Analytical Approach	Analytical Outputs
RQ1. What are the patterns of scholarly productivity and scientific impact of publications related to career decision-making?	There has been no systematic review summarizing the development, publication intensity, and scientific impact of career decision-making study within a specific time period.	Bibliometric performance analysis	1) Volume and distribution of publications. 2) Citation patterns and scientific impact. 3) Most productive authors, countries, and institutions. 4) Publication trends over time
RQ2. Which works and contributors play the most important roles in shaping the field of career decision-making?	Key references and major intellectual actors that form the foundation of career decision-making studies have not been comprehensively mapped.	Citation-based science mapping (co-citation analysis)	1) Identification of core reference works. 2) Influential authors and intellectual networks. 3) Clustering of theoretical traditions and schools of thought.
RQ3. How are scientific collaboration patterns configured in career decision-making studies?	Collaborative relationships among researchers, institutions, and countries in career decision-making studies remain insufficiently articulated.	Collaboration-based science mapping (co-authorship analysis)	1) Mapping of author collaboration networks. 2) Institutional and country-level connectivity. 3) Identification of study collaboration hubs.
RQ4. What major themes define the scope of career decision-making studies, and how have they evolved over time?	A comprehensive mapping of thematic focus, topic clustering, and developmental trends in career decision-making studies is lacking.	Keyword-based science mapping (keyword co-occurrence analysis)	1) Thematic study clusters. 2) Dominant and emerging study topics. 3) Directions and dynamics of study trends.

The data collection process in this study was conducted through several systematic stages designed to ensure the completeness, accuracy, and reliability of bibliometric data analyzed (Passas, 2024). The first stage covered the definition of the scholarly field, which comprised clearly delineating the scope of the study by focusing on career decision-making among younger generations, particularly during the transition into the world of work. This focus was selected to capture the dynamics of career decision-making in the context of the modern labor market, characterized by uncertainty and high demands for adaptability.

The second stage include the selection of database. Scopus was selected as the primary database for bibliometric analysis in this study because the majority of its indexed publications undergo a double-blind peer-review process and are published in high-impact journals (Baas et al., 2020). Additionally, Scopus covers journals from a wide range of disciplines and countries, providing broad and balanced representation for bibliometric analysis (Singh et al., 2021).

The third stage covered the establishment of study criteria and search refinement. At this stage, terminology related to career decision-making among younger generations was specified. Data were collected through a structured search strategy using Boolean operators to ensure consistency with the study topic. The search string applied to the

title, abstract, and keyword fields was: TITLE-ABS-KEY ("career choice" OR "career decision" OR "career planning" OR "vocation decision" OR "profession selection") AND TITLE-ABS-KEY ("young adult" OR "gen z" OR adolescent) AND 2015-2025. The search was conducted on 26 September 2025 to obtain a comprehensive overview of relevant scholarly publications.

The fourth stage covered the codification and screening of retrieved documents. At the initial stage, a total of 3,693 documents were identified. All documents obtained from the preliminary search were then screened based on predefined inclusion and exclusion criteria, covering topic relevance to career decision-making among younger generations, document type (journal articles), publication time frame, and completeness of metadata. Data cleaning was also conducted at this stage to ensure the consistency and accuracy of bibliographic information prior to further analysis, resulting in a final dataset of 1,872 documents eligible for analysis.

The fifth stage consisted of developing bibliometric networks of relationships. The screened data were analyzed using VOSviewer software to map relationships among publications, covering the intellectual structure through citation analysis and co-citation analysis, as well as the thematic structure via keyword co-occurrence analysis. The final stage covered reporting and applying the results of the analysis. The results are presented in the

form of tables, charts, and network visualizations, accompanied by descriptive analyses to explain patterns of scholarly productivity, contributions of authors, institutions, and countries, as well as the evolution of scholarly themes. These observations serve as a basis for identifying gaps in the existing literature and providing initial directions for the development of a career decision-making model adaptive to the dynamics of the contemporary world of work.

Results

This section presents the results of the analyses conducted to address all of the questions proposed in the present study.

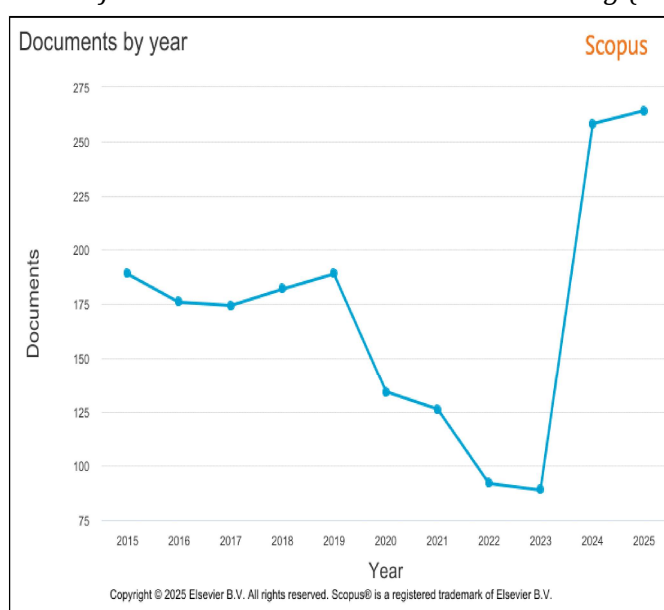
Performance Analysis

The results of the performance analysis are presented to show the level of productivity and publication impact of career decision-

making scholarship over the period from 2015 to 2025. The analysis focuses on trends in publication output over time, the most productive authors, countries, and institutions, as well as the journals that have published the largest number of studies related to this topic. Figure 1 presents the annual distribution of publications on career decision-making. Publication productivity remained relatively stable during the period from 2015 to 2019. A decline in the number of publications became apparent between 2020 and 2023, followed by a very significant increase in the most recent two years. However, 2025 was recorded as the period with the highest number of publications, pointing to a renewed and strengthened academic interest in career decision-making in response to the increasingly complex dynamics of the contemporary world of work.

Figure 1

Annual Number of Publications on Career Decision-Making (2015–2025)



An analysis of authorship shows that some scholars have played dominant roles in the development of career decision-making scholarship. Table 2 presents the most productive authors based on publication output, total citations, and the strength of collaboration networks (total link strength). It is important to state that several authors with relatively fewer publications were observed to exhibit high citation counts, pointing to influential theoretical and conceptual contributions to the field. At the institutional level, career decision-making scholarship appears to be concentrated within a number of

leading universities. Monash University ranks as the most productive institution, followed by several universities from Australia, the United States, Canada, and Israel. From a geographical perspective, career decision-making scholarship is dominated by countries with strong traditions in psychological and educational study. The United States occupies the leading position in terms of both productivity and citation impact, followed by Australia and the United Kingdom. Total link strength values further show that these countries also play central roles in international scholarly collaboration networks.

Table 2*Most Productive Authors, Institutions, and Countries in Career Decision-Making Studies*

	Total Articles	Total Citations	Total Link Strength
<i>Authors</i>			
Gati, I.	15	351	6
Parola, A.	13	109	8
Marcionetti, J.	11	102	8
Creed, P. A.	9	269	5
Lipshits-Braziler, Y.	8	134	6
Eccles, J. S.	6	393	0
Rounds, J. B.	6	242	0
Kawamoto, R.	6	91	15
Zhou, N.	6	133	8
Cleland, J. A.	6	127	0
<i>Institution</i>			
Monash University (Australia)	24	404	14
Hebrew University of Jerusalem (Israel)	19	381	1
University of Queensland (Australia)	19	196	5
Tel Aviv University (Israel)	17	234	1
University of Illinois Urbana–Champaign (United States)	14	333	1
University of Toronto (Canada)	14	311	5
University of Michigan Medical School (United States)	14	237	2
Stanford University School of Medicine (United States)	14	212	5
University of British Columbia (Canada)	14	190	4
University of Newcastle (Australia)	13	535	7
<i>Countries</i>			
United States	616	11.648	187
Australia	176	3.572	117
United Kingdom	154	2.515	121
China	131	1.118	51
Germany	101	1.207	70
Canada	95	1.415	62
Italy	57	771	63
Turkey	51	534	36
Israel	50	769	13
Switzerland	50	474	62

The journal distribution presented in Table 3 shows that career decision-making scholarship is multidisciplinary in nature, with a predominance of journals in the fields of

education and health. Journals focusing on psychology and career development, however, continue to play an important role in advancing the theoretical frameworks of this field.

Table 3

Most Productive Journals in Career Decision-Making Studies

Journals	Total Articles	Total Citations
BMC Medical Education	129	1.459
PLOS ONE	54	967
Nurse Education Today	39	954
Journal of Surgical Education	28	329
BMJ Open	25	722
Journal of Counseling Psychology	24	690
Journal of Career Development	21	556
Journal of Career Assessment	20	349
Nurse Education in Practice	20	237
Journal of Vocational Behavior	14	542

Science Mapping

Science mapping was conducted to identify the intellectual structure, social structure, and thematic structure of career decision-making scholarship, as examined through co-citation analysis, co-authorship analysis, and co-occurrence analysis. These three techniques provide complementary perspectives on the theoretical foundations, patterns of scientific collaboration, and thematic focuses that shape the scholarly landscape of career decision-making.

Co-citation analysis was conducted to uncover the intellectual structure of career decision-making scholarship by identifying references most frequently cited together

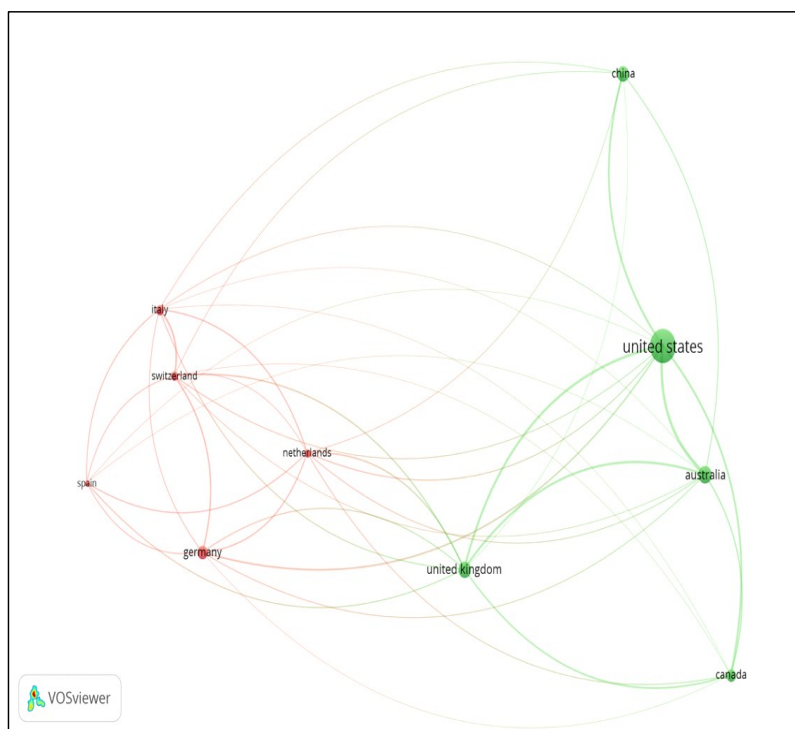
across publications. The unit of analysis consisted of cited references using the full counting approach, such that the relationships among references reflect conceptual proximity in the literature. Figure 2 shows that the intellectual structure of this field is strongly shaped by classical works in psychology, particularly those related to social cognitive theory, self-efficacy, and individual development. Based on the analysis results, the works of Albert Bandura occupy a central position in the co-citation network, specifically *Social Foundations of Thought and Action: A Social Cognitive Theory* in 1986, *Self-Efficacy: Toward a Unifying Theory of Behavioral Change* in 1977, and *Self-Efficacy: The Exercise*

Co-authorship analysis was conducted to map the social structure of career decision-making scholarship by examining patterns of international collaboration. This analysis aimed to identify countries that play central roles in scientific collaboration networks as well as the intensity of collaborative relationships formed. The results presented in Figure 3 show that the United States occupies the most dominant position in the international collaboration network. The country shows the highest number of publications and citations, along with the greatest total link strength, reflecting active and intensive engagement in cross-national collaborations. Strong collaborative ties are

observed between the United States and countries such as the United Kingdom, Australia, Canada, and China. European countries, including Germany, Italy, Switzerland, the Netherlands, and Spain, form a regional collaboration cluster characterized by relatively close internal connections in the network. Although their connectivity with core countries is relatively moderate, intra-European collaborations appear consistent and well-structured. China has grown into a significant collaborative partner, with primary connections to the United States and Australia, regardless of the fact that the intensity of its collaborations remains relatively lower compared to the core countries.

Figure 3

International Co-Authorship Network in Career Decision-Making Study



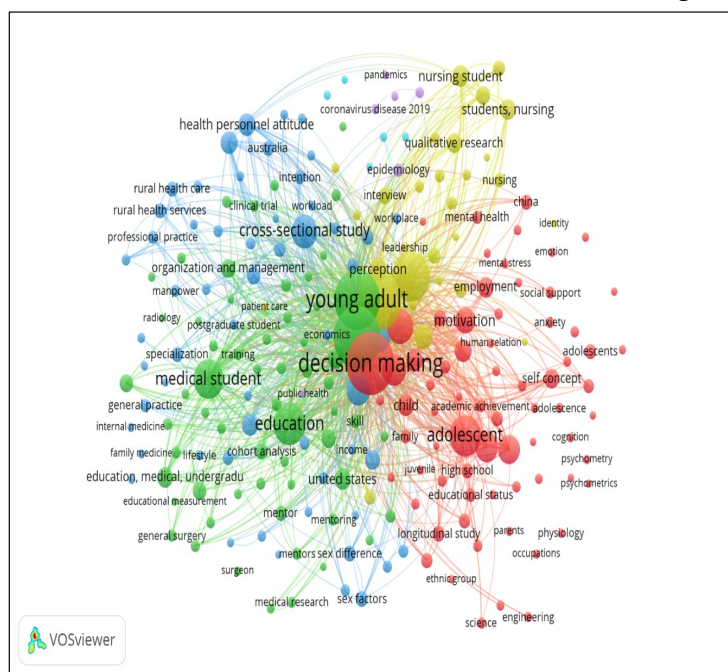
Keyword co-occurrence analysis was subsequently conducted to identify the thematic structure of career decision-making scholarship based on the relationships and frequency of keyword occurrences across publications. This analysis generated a network map showing the clustering of topics into several major thematic groups. The mapping results shown in Figure 4 show that the thematic structure of career decision-making scholarship is dominated by four main clusters. The largest cluster, represented in green yellow, is centered on the keywords decision making and young adult. The dominance of this cluster suggests that global scholarly output has largely focused on career decision-making processes among individuals in transitional life stages, particularly in educational and healthcare contexts. The

presence of keywords such as medical student, nursing student, education, and organization and management draws attention to the strong representation of medical education and health-related professions in the literature.

The red cluster represents psychological themes related to intrapersonal aspects and individual development, including motivation, self-concept, mental health, anxiety, and adolescent. This cluster reflects scholarly attention to psychological factors shaping career decision-making, particularly among adolescents and young adults. The inclusion of keywords such as ethnic group and identity points to a growing exploration of social and identity dimensions, although their connections remain relatively smaller compared to the dominant psychological themes.

Figure 4

Keyword Co-Occurrence Network in Career Decision-Making Studies



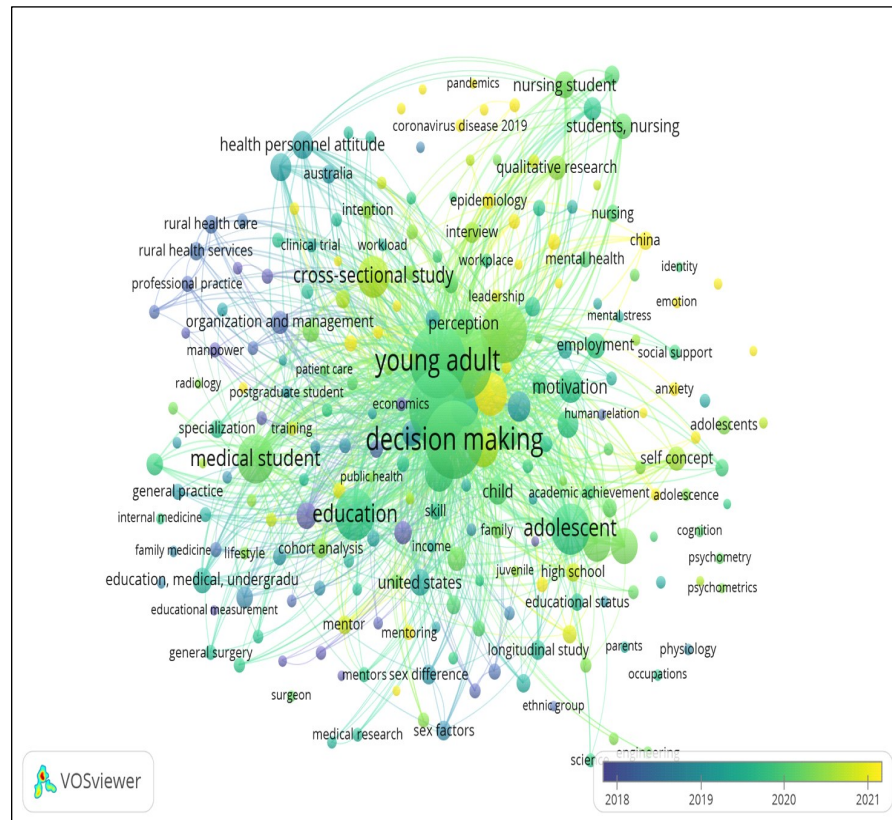
The blue cluster is dominated by methodological and study design terms, including cross-sectional study, clinical trial, epidemiology, and cohort analysis. This pattern shows the predominance of quantitative approaches in career decision-making scholarship, particularly in investigations situated in health and educational contexts. The yellow cluster features themes such as qualitative exploration, interview, workplace, and leadership. Although this cluster is relatively smaller in size, its presence suggests that qualitative approaches and organizational contexts are also part of the scholarly landscape, even though they have not yet become quantitatively dominant. These findings show that career decision-making scholarship remains largely centered on educational and health-related contexts, with a primary focus on adolescents and young adults, alongside a strong tendency toward quantitative approaches.

The overlay visualization of the keyword co-occurrence map shows the temporal dynamics of career decision-making scholarship over the period from 2015 to 2025. Figure 5 presents a gradient color pattern of nodes

representing the average year of publication, showing that the early phase of scholarly output was dominated by quantitative approaches and by educational and health-related contexts, typically represented by blue to green colors. Over time, this visualization exposes a shift in focus toward more recent topics, as reflected by nodes colored in yellowish green to yellow. Keywords such as mental health, pandemics, coronavirus disease 2019, workplace, leadership, and qualitative exploration stand out as relatively newer themes in the literature. This pattern shows that career decision-making scholarship is not static but continues to evolve in response to changes in social conditions and work environments. The presence of lighter-colored keywords located at the periphery of the map further suggests that several developing topics remain at an early stage and have not been strongly integrated into the core thematic structure. This pattern reflects a gradual process of thematic evolution in the literature, in which scholarly focus shifts from education- and professional training-oriented investigations toward broader and more contextual issues, while the dominance of well-established core topics is maintained.

Figure 5

Overlay Visualization of Keyword Co-Occurrence Based on Average Publication Year



Discussion

The results of this study provided a deeper understanding of the direction of career decision-making scholarship over the past decade, viewed from the perspectives of scholarly production, intellectual structure, and researcher collaboration patterns. These observations directly addressed RQ1 concerning the patterns of productivity and scientific impact in career decision-making publications. Conceptually, the results showed that the field of career decision-making developed progressively, yet continued to exhibit concentrations around particular themes and methodological approaches. The

significant increase in publication output toward the end of the study period reflected a strengthening of academic attention to career decision-making in the context of an increasingly dynamic world of work. This growth can be understood as a response to rising career uncertainty, the growing complexity of transitions from education to the workplace, and increased demands for individual adaptability in the face of structural changes across various sectors (Johnston, 2018; Steiner et al., 2021; Struffolino & Raitano, 2020). This pattern is consistent with global trends in the career psychology and education literature, pointing to a shift from linear career

choices toward more dynamic processes in which decision-making becomes iterative and context-dependent (Koen & Sijbom, 2020). The dominance of certain countries in terms of productivity and citation impact showed that theoretical development and empirical evidence in this field remained largely shaped by scholarly ecosystems in developed countries. This finding further reinforced the response to RQ1 regarding disparities in scientific influence across regions in career decision-making scholarship. These conditions suggested that specific social and cultural perspectives continued to play a substantial role in shaping the global direction of career decision-making scholarship.

The intellectual structure identified through co-citation analysis showed that career decision-making scholarship depended heavily on theoretical foundations from social cognitive psychology and developmental psychology. This section specifically addressed RQ2 concerning the works and contributors that played the most influential roles in shaping the field of career decision-making. The dominance of classical works related to self-efficacy and early adulthood development in the analysis showed that career decision-making continued to be understood primarily as an individual psychological phenomenon associated with self-beliefs, aspirations, and developmental stages. The strong interconnections among these core works suggested that the field possessed a stable and

cumulative theoretical structure. This finding is consistent with studies by Murasing et al. (2025) and Wang et al. (2023), who stated that confidence in career decision-making is strongly shaped by individual psychological variables. This consistency reflects a degree of conceptual maturity, although it also showed that exploration of alternative theoretical frameworks remained relatively limited. The existing intellectual structure functioned as a central anchor for understanding career decision-making, while simultaneously constraining the diversity of perspectives developed in the field. Sullivan and Al Ariss (2021) similarly identified five major theoretical perspectives in career transition studies, covering career stage, decision-making, adjustment, relational, and identity. The study stated that classical decision-making perspectives tended to dominate, while rational and identity-based approaches remained underexplored and required further development. These findings, therefore, draw attention to the need to broaden theoretical perspectives capable of more evenly capturing cognitive, identity, and relational dimensions in explaining career decision-making.

The collaboration patterns identified through co-authorship analysis showed that knowledge development in the field of career decision-making was characterized by cross-national collaboration, but remained concentrated in specific networks. This finding directly addressed RQ3 concerning the

configuration and characteristics of scientific collaboration in career decision-making scholarship. Countries with high collaborative strength functioned as key connectors in knowledge exchange and publication production. This form of centralized collaboration reflected a hierarchical structure in the global scholarly ecosystem, in which countries with strong scholarly resources occupied strategic positions in shaping scholarly agendas (Chinchilla-Rodríguez et al, 2019). Although international collaboration expanded during this period, its distribution remained uneven, resulting in the relative underrepresentation of diverse career contexts and experiences from other regions within much of the existing literature.

The thematic mapping based on keyword co-occurrence analysis further showed that career decision-making scholarship continued to be concentrated in educational and health-related contexts, particularly among adolescent and young adult populations. This finding addressed RQ4 concerning the major themes defining the scope of career decision-making scholarship. The dominance of these themes reflected the central role of educational institutions and professional training settings as primary arenas for studying career decision-making, where these forms decisions are considered consequential and empirically observable. The prominence of individual psychological themes showed that micro-level approaches remained the dominant

framework for understanding career decision-making. The prevailing use of quantitative study designs suggested a preference for measurement and generalization (Dolnicar et al, 2024), rather than in-depth exploration of subjective experiences. Although qualitative approaches began to appear in the thematic landscape, their role remained relatively limited, pointing to substantial opportunities for future methodological development.

The overlay visualization results showed that the focus of career decision-making scholarship shifted over time. This section further elaborated the response to RQ4 regarding the direction of thematic development in career decision-making scholarship. During the early period, investigations were predominantly conducted in educational and health-related contexts, with a strong emphasis on quantitative approaches. This pattern reflected that career decision-making was initially understood as a relatively structured process mappable onto clearly defined phases (Yates, 2025), and measurable in formal institutional settings such as schools and higher education (Azhenov et al, 2023). Over time, more recent topics surfaced, including mental health, pandemics, workplace contexts, and the use of qualitative approaches. These developments suggested an expansion of scholarly attention toward psychosocial factors and more dynamic contexts of career decision-making. However, the connections between these newer topics and the core

themes remain limited, showing that the integration of earlier and more recent scholarly foci was unfolding gradually.

Theoritically, the results of this study provided a reflective contribution to the direction of development in career decision-making scholarship. The intellectual structure of career decision-making investigations remained strongly shaped by social cognitive psychology and individual developmental frameworks. The synthesis of these findings conceptually integrated the answers to RQ2 and RQ4. The dominance of theoretical references showed that the conceptual foundation of the field had become stable and mature, while also showing that the prevailing theoretical understanding was largely rooted in educational contexts and early career transitions. Frameworks such as self-efficacy, career adaptability, and indecision continued to serve as the primary foundations for explaining career decision-making processes across various contexts. However, this stability simultaneously pointed to a limited exploration of alternative theoretical perspectives. Thematic mapping showed that approaches conceptualizing career decision-making as a process shaped by organizational dynamics, social structures, and cultural contexts remained relatively underdeveloped. The main theoretical contribution of this study, therefore, lies in its ability to identify conceptual gaps in the global literature and to draw attention to the need for more contextualized and multilevel theoretical

frameworks to explain career decision-making, particularly beyond educational settings and health-related professions.

This study can further serve as an empirical basis for evaluating the extent to which dominant theories could be expanded, contextualized, or integrated with other perspectives in explaining career decision-making. Theoritically, career decision-making scholarship can be further enriched by accounting for the cognitive processes through which individuals process information, evaluate alternatives, and make career choices, specifically in increasingly complex and uncertain decision-making contexts. This view is consistent with Gati and Kulcsár (2021), who emphasized that the core of career decision-making covered generating promising draft alternatives, verifying their fit with the individual, and then comparing the drafts to select the most suitable option.

Systematic cognitive processes can support individuals in managing the complexity of modern career decisions. This point is further reinforced by findings from recent investigations in Asia and Africa, which showed that indecisiveness in thinking and inaccurate assumptions constituted major sources of difficulty in career decision-making (Fajriani et al, 2024), and that information limitations also played a significant role (Li et al., 2024). Strengthening career decision-making scholarship through approaches that integrate cognitive processes, individual contexts, and

environmental dynamics is therefore essential to producing a more comprehensive and relevant understanding, while also creating opportunities for the development of career decision-making models more adaptive to the challenges of the contemporary world of work.

Conclusions

In conclusion, bibliometric analysis conducted in this study showed that career decision-making scholarship experienced a significant increase during the period from 2015 to 2025, accompanied by dynamic thematic developments over time. The performance analysis identified key scholarly contributors, publication sources, as well as countries and institutions that played important roles in shaping the direction of scholarship in this field. Science mapping further showed that the intellectual structure of career decision-making scholarship was supported by relatively well-established theoretical foundations, while its thematic structure remained largely dominated by educational and health-related contexts with an individual psychological orientation. Temporal dynamics also pointed to a gradual shift in scholarly focus toward more contextual issues, although the integration of these newer topics remained a work in progress.

Practically, the results of this mapping can serve as a foundation for formulating more targeted future scholarly agendas, particularly by identifying underexplored themes,

populations that are relatively marginalized in the literature, and suboptimally developed methodological approaches. The resulting thematic map and intellectual structure allow scholars to position subsequent investigations more strategically, both in expanding existing theoretical frameworks and in developing scholarship in new contexts beyond education and health. In terms of relevant practices such as career counseling and the development of educational programs, these findings also provide an evidence-based foundation for understanding dominant scholarly foci and existing gaps in the literature. Information on major themes and the direction of scholarly development can be utilized by career counselors and educators to design interventions, counseling services, and career development curricula more closely attuned to contemporary career decision-making challenges, while remaining responsive to individual needs in increasingly complex and dynamic contexts.

Bibliometric approach was selected to provide a systematic macro-level overview of the development, intellectual structure, and dynamics of career decision-making scholarship in the global literature. This approach allowed for the identification of patterns of productivity, scientific influence, collaboration, and the evolution of scholarly themes over an extended time period. At the same time, the methodological limitations inherent in bibliometric analysis open

opportunities for future exploration through complementary approaches, such as systematic literature reviews, qualitative meta-syntheses, or empirical investigations focusing on specific contexts and populations, in order to enrich the aggregate findings generated by bibliometric mapping. Beyond these methodological considerations, several limitations of this study warrant specific acknowledgment. First, the investigation analyzed only journal articles, while other publication types, such as conference proceedings and review articles, were not included. These publication types may contain additional findings or perspectives relevant to the scholarship of career decision-making. Second, the collaboration analysis was restricted to publications directly related to career decision-making, which limited the scope of the identified collaboration networks, as contributions by authors and institutions in other scholarly contexts were not captured in the mapping. Third, as a bibliometric investigation, this study did not conduct an in-depth content analysis of each analyzed article. The findings are presented at an aggregate level and are intended to provide an entire picture of scholarly patterns, structures, and dynamics. A review of several key articles was conducted to help strengthen the interpretation of the mapping results.

Suggestion

Based on the findings and limitations of this study, several operational recommenda-

tions can be proposed for future investigation and relevant stakeholders. First, future scholars are admonished to broaden the scope of data sources by including other types of publications, such as conference proceedings and systematic review articles, in order to obtain a more comprehensive overview of developments in career decision-making scholarship. This step is important for capturing conceptual and methodological discourses that may not been fully represented in journal articles. Second, subsequent investigations are advised to combine bibliometric analysis with a systematic literature review or scoping review that focuses on the content of key articles. Such an approach would allow for a more in-depth exploration of scholarly contexts, examined variables, and theoretical models used to explain career decision-making processes.

Third, considering the dominance of educational and health-related contexts in the thematic mapping, future investigations should explicitly direct greater attention to underexplored populations, such as early-career employees, workers in non-health sectors, and individuals in organizational settings. The use of longitudinal designs or mixed-method approaches is also recommended to capture the dynamics of career decision-making in a more contextualized and sustained manner. Fourth, for policymakers and career development practitioners, the results of this mapping can

serve as a foundation for designing more adaptive intervention programs and career development services by accounting for psychological, social, and work-related contextual factors relevant to specific target groups.

Acknowledgments

The authors are grateful to the Faculty of Psychology, Universitas Islam Indonesia, for the support provided in the preparation and publication of this manuscript

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Received 13 January 2026
Revised 14 January 2026
Accepted 30 January 2026

